

**INTERNATIONAL
BIOMETRIC SOCIETY
EASTERN NORTH AMERICAN REGION**



2002 SPRING MEETING



**MARCH 17-20, 2002
HYATT REGENCY CRYSTAL CITY
ARLINGTON, VA**



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INTRODUCTION AND OVERVIEW

The ENAR 2002 Spring Meeting will be held March 17–20 at the Hyatt Regency Crystal City, Arlington, VA, near Reagan National Airport. Overlooking the Potomac River, the meeting hotel is close to both historic Old Town Alexandria and the Pentagon. In addition to free shuttles between the airport and the hotel, the hotel provides a free shuttle to and from the nearby Crystal City METRO stop which connects visitors to the U.S. Capitol, the Smithsonian, the White House, Georgetown, and other sights of interest in the Washington, D.C., area.

Joanna Shih and the 2002 Program Committee have put together an outstanding scientific program of 36 invited sessions and two IMS special lectures that spans theory through applications areas where there are major new developments. This is a time when we face challenges in keeping our knowledge and skills up-to-date due to rapidly changing directions in several areas of application. The ENAR meeting provides an opportunity for you to hear about the most recent statistical methods and practice in areas such as genetics, environmetrics, and evolving new areas of application, such as bioinformatics. The invited sessions provide presentations and discussion by statisticians who are actively contributing in these important areas. The sessions also encompass innovative and timely developments in other disciplinary areas of application, including medicine, agriculture, and environmental sciences. Please see page 9–10 for a complete listing of the invited sessions.

We are very pleased that Sir Richard Peto, Professor of Medical Statistics and Epidemiology and Co-Director of the Clinical Trials Service Unit at Oxford University, has agreed to present the 2002 Presidential Address on Tuesday morning, March 19. Sir Richard Peto first became widely known for his statistical research in developing the log-rank test for comparison of survival curves. He has been a leader in developing and applying statistical methods for conducting systematic overviews (meta-analyses) of randomized clinical trials, as well as for designing and conducting large-scale trials to address important clinical questions. His applied research has had a major impact on public health. With Sir Richard Doll and others, he is internationally recognized for contributions in assessing the effects of tobacco smoking on mortality and for his role in influencing public policy on smoking. In collaboration with Professor Rory Collins and others, he showed that tens of thousands of deaths could be prevented annually by having patients use low-dose aspirin as an anti-platelet treatment following a heart attack. The worldwide overviews conducted by Sir Richard Peto

produced the earliest reliable evidence that adjuvant systemic therapy could reduce mortality in women with early stage breast cancer. For these and other outstanding accomplishments, he has received many awards and honors, including his election as a Fellow of the Royal Statistical Society in 1989 and being knighted in 1999.

This year, we will have five short courses, four full-day and one half-day, offered on Sunday, March 17. The short courses, which are described more fully on pages 11–12, include methods for analyzing functional data, design and analysis of cluster randomized studies, Bayesian survival analysis, statistical methods for genetic epidemiology, and analysis of microarray data. Starting from first principles, they provide background instruction on fundamental concepts and methods with illustrative examples that will complement and enhance the understanding of many of the invited talks. The short courses are intended for a broad audience who want a systematic introduction to statistical methods and applications in the topical area. Five tutorial sessions are also scheduled on Monday and Tuesday. Each tutorial consists of approximately two hours of instruction on applying specialized techniques or software relevant for practicing biometricians. The tutorials offered this year include use of SAS routines tailored for analyzing microarray data, analyses of balanced and unbalanced cluster randomized designs using Stata and SUDAAN, inferential issues in measuring quality-adjusted lifetime (QAL) with censored observations, hierarchical regression models for evaluating performance of healthcare providers, and imputation for missing outcomes or covariates in multivariate regression analyses. Detailed descriptions of these tutorials are given on pages 13–14.

The Workshop for Junior Biostatisticians will be given again this year on Saturday, March 16, preceding the Spring Meeting. We are indebted to Naisyin Wang and her committee for assuring the continuation of this highly successful endeavor. Individuals who have received their Ph.D. within the past five years are eligible to register for the Workshop. Attendees will receive suggestions for career development in areas such as publication, writing grants, statistical collaboration, and survival skills. If you want to participate in this workshop, we encourage you to apply as soon as possible, since enrollment is limited to the first forty applicants. Information about the Workshop for Junior Biostatisticians can be found on page 8.

CONTINUED ON PAGE 29

GENERAL INFORMATION

MEETING DATES

Sunday, March 17, 2002, to Wednesday, March 20, 2002 (noon)

LOCATION

Hyatt Regency Crystal City
Arlington, VA

REGISTRATION

Registration will be held from 3:00 to 5:00 p.m. on Saturday, March 16, and from 7:30 a.m. to 6:30 p.m. on Sunday, March 17, for those enrolling in the short courses. The registration fee includes refreshment breaks and the opening mixer. The registration fee, less a \$100 administrative fee, is refundable if written notice of cancellation is received by February 20, 2002.

REGISTRATION FEES

Received	before Feb. 10	after Feb. 10
ENAR/WNAR/IBS Member	\$170	\$195
ASA Member (not a member of ENAR/WNAR/IBS)	\$190	\$215
IMS Member (not a member of ENAR/WNAR/IBS) (\$190 – \$20 IMS contribution = \$170)	\$170	\$195
Student	\$90	\$100
Nonmember* (in any participating society)	\$260	\$285

*Nonmember fee includes \$70 for 2002 ENAR membership.

OPENING MIXER AND POSTER SESSION

The Opening Mixer and Poster Session (included in the registration fee) will take place from 8:00 to 11:00 p.m. on Sunday, March 18.

ROUNDTABLE LUNCHEONS

This year, the roundtable luncheons will be held on Monday, March 18, from 12:15–1:30 p.m. Space for each roundtable is limited and preregistration is required. The fee is \$25 per person and includes lunch. For topic information, please see pages 14–16.

SHORT COURSES AND

PRESIDENTIAL INVITED ADDRESS

The Washington, D.C., meeting will begin with an exciting set of short courses on Sunday, March 17.

Received by February 10

	Full Day	Half Day
Member	\$180	\$100
Nonmember	\$205	\$125

Received after February 10

	Full Day	Half Day
Member	\$205	\$125
Nonmember	\$230	\$150

Be sure to register in advance, using either the Registration Form on page 19 or the electronic registration form on the ENAR Web site (www.enar.org/meetings.htm).

ABSTRACT SUBMISSION

Abstracts can be submitted electronically from the Meetings page of our Web site: <http://www.enar.org>. You must create a unique username/password for each abstract submitted online. This will enable you to make changes to submitted abstracts. Abstracts can be edited and submitted until midnight, **November 15, 2001**. No abstracts can be accepted after that date. Details on using the online form are posted on the ENAR Web site.

PLACEMENT SERVICE

There will be a job placement service at the Spring Meeting. The registration deadline for the placement service is February 20, 2002. Applicant and Employer Forms appear on pages 25–28 in this booklet. **Forms, along with all resumes, must be received by February 20** to insure inclusion in the review binders. ENAR cannot accept confidential listings. The Placement Center will be open during the following times:

- Sunday, March 17: 4:30–6:30 p.m.
- Monday, March 18: 9:00 a.m.–5:00 p.m.
- Tuesday, March 19: 9:00 a.m.–5:00 p.m.

The Placement Center will not be open on Wednesday, March 21.

ABSTRACT PUBLICATION IN *BIOMETRIC BULLETIN*

If you want your abstract published in the *Biometric Bulletin*, please provide a 50-word description along with the author's name and address and abstract title. These "short version" abstracts must be received in the ENAR office by April 5, 2002. You may e-mail the 50-word abstract to enar@enar.org. Note: Submission of a 50-word abstract does not constitute official abstract submission/registration for the meeting. Please, use the official Abstract Form provided on page 23.

TUESDAY EVENING EVENT Tuesday, March 19, 2002: The Capitol Steps

We have arranged an evening of eating, meeting, and greeting followed by a performance by the Capitol Steps (<http://www.capsteps.com>) a troupe of Congressional staffers turned comedians who satirize the very people and places that once employed them. You may have seen them on public television or heard them on public radio.

The Capitol Steps were born in December 1981 when three staffers for former Illinois Senator Charles Percy were planning entertainment for a holiday party. Digging into the headlines of the day, they created song parodies and skits that conveyed a special brand of satirical humor that played as well in Peoria as it did on Pennsylvania Avenue.

Most cast members have worked on Capitol Hill—some for Democrats, some for Republicans, and others for politicians who firmly straddle the fence. No matter who holds office, there's never a shortage of material. According to the Steps, "Typically the Republicans goof up and the Democrats party. Then the Democrats goof up and the Republicans party. That's what we call the two-party system."

No matter what the audience, the Steps have found that people love to laugh at the foibles of public figures like Bill Clinton ("My Way"), George W. Bush ("Aristocrat From the Cradle With a Silver Spoon"), and Bob and Liddy Dole, whose polls may finally rise with the help of "Viagra" (sung to "Maria"). In fact, the Capitol Steps have performed for the last four Presidents. The only complaints the Steps seem to get are from politicians and personalities who are not included in the program!

A reception with dessert and a cash bar will be held from 8:00–8:30 p.m. in the hotel, and the Capitol Steps will perform from 8:30–9:30 p.m. Cost is \$60 per person (\$30 per student).

STUDENT BREAKFAST

All students are invited to attend the student breakfast on Monday, March 18, from 7:30 to 8:30 a.m.

AIRLINE INFORMATION

ENAR has selected United Airlines as the official airline for the 2002 Spring Meeting. If you or your travel agent call United's Specialized Meeting Reservations Center, (800) 521–4041, to book your reservations, you will receive a 5% discount off the lowest applicable discount fare, including first class, or a 10% discount off full-fare, unrestricted coach fares purchased seven days in advance. An additional 5% discount will apply when tickets are purchased at least 60 days in advance of your travel date. Discounts also apply on Shuttle by United and United Express. Make sure you refer to Meeting ID Number 557XD. Reservation agents are on duty seven days a week from 7:00 a.m. to 12:00 midnight EST.

LOCAL TRANSPORTATION

Taxicabs

Taxi service will bring you directly to the hotel from Reagan National Airport for approximately \$15.

Shuttle Service

Complimentary shuttle service is available to and from the hotel and Reagan National Airport, Metrorail, nearby office buildings, shopping, and restaurants.

Hotel Parking

Valet parking is available at the Hyatt Regency Crystal City. The rate is \$7 for the first hour, \$9 for two hours, \$12 for 2–8 hours, \$15 for 8–12 hours, and \$18 for more than 12 hours. The price for overnight guests is \$18 per day.

HOTEL ACCOMMODATIONS

Hyatt Regency Crystal City

2799 Jefferson Davis Highway
Arlington, VA 22202

Phone: 703–418–1234 or 1–800–233–1234

Hotel Rates

Single/Double: \$155

Each additional person: \$25

Currently an additional 9.75% will be added for state and local taxes. You will receive confirmation directly from the hotel.

Be sure to say you are with the ENAR meeting. We encourage you to reserve your room early. The cutoff date for making reservations is February 22, 2002. Guest room reservations must be received by the above date or availability cannot be guaranteed.

The Hotel Reservation Form is on page 21. Please mail or fax the form directly to the Hyatt Regency Crystal City whose address appears on the form.

CRYSTAL CITY

Welcome to Crystal City in Arlington, Virginia—part of the Washington, D.C., metropolitan area. Whether you are a first-time or repeat visitor, the metro area offers a multitude of sightseeing opportunities. Public transportation makes getting to activities easy. The Metrorail system extends from the District of Columbia into Maryland and Virginia, including stops at Crystal City and National Airport. Metrorail and other information is available at the Washington, D.C., visitor information center Web site: <http://www.dcvisit.com>. Other helpful Web sites are given below, representing just a few of the historical, theatrical, educational, and entertainment attractions.

The **Smithsonian Museum** (<http://www.si.edu>) includes the National Air and Space Museum (offering IMAX theater and planetarium shows), the National Museum of Natural History (with another IMAX theater), the National Museum of American History, and the Hirshhorn Museum and Sculpture Garden. Hours are 10:00 a.m. to 5:30 p.m. every day. General admission is free.



The **National Mall** (<http://www.nps.gov>) is a favorite destination. Americans honored by the monuments and memorials include Lincoln, Jefferson, Washington, Franklin Delano Roosevelt, Vietnam Veterans, and Korean War Veterans. Buildings include the Smithsonian, National Gallery of Art, White House, U.S. Capitol Building, Supreme Court, and Library of Congress. If we're lucky, the cherry trees will put on a show—they have bloomed as early as March 15.

FOR MORE INFORMATION, CONTACT

Kathryn Hirst
Biostatistics Center
George Washington University

E-mail: khirst@biostat.bsc.gwu.edu

The **National Zoological Park** (<http://www.nat zoo.si.edu>) is also part of the Smithsonian. The two giant pandas, Mei Ziang and Tian Tian, are among the attractions. The grounds are open daily from 6:00 a.m. to 6:00 p.m. (buildings from 10:00 a.m. to 4:30 p.m.). General admission is free.

The **National Gallery of Art** (<http://www.nga.gov>) offers special exhibits as well as permanent collections. Hours are 10:00 a.m. to 5:00 p.m., Monday through Saturday, and 11:00 a.m. to 6:00 p.m., Sunday. General admission is free.

The **John F. Kennedy Center for the Performing Arts** (<http://kennedy-center.org>) is located on the banks of the Potomac River. Home to the National Symphony Orchestra, the Kennedy Center also offers theater, musical, dance, ballet, jazz, and opera performances as well.

The **MCI Center** (<http://www.mcicenter.com>) offers sports, concerts, and special events. Catch the action of the NBA's Washington Wizards or the NHL's Washington Capitals if they're in town.

Alexandria, Virginia (<http://ci.alexandria.va.us>) is located a few Metrorail stops south of Crystal City. It features historic Alexandria; the Torpedo Factory Art Center, home to working studios and galleries; and many shops and restaurants.

WORKSHOP FOR JUNIOR RESEARCHERS

A workshop for junior researchers will be held in the afternoon and evening of **Saturday, March 16, 2002**. The purpose of the workshop is to provide junior researchers with the requisite knowledge of necessary skills and opportunities essential for a successful research career and to provide a forum for junior and senior researchers to interact and exchange information.

WORKSHOP PARTICIPANTS

Nine prominent researchers at diverse stages of their careers and with different backgrounds and interests will attend this workshop. They are

- **Marie Davidian**, Professor, Department of Statistics, North Carolina State University, current *Biometrics* co-Editor;
- **David Harrington**, Professor, Department of Biostatistics, Harvard University;
- **Xihong Lin**, Associate Professor, University of Michigan;
- **Roderick Little**, Professor and Chair, Department of Biostatistics, University of Michigan;
- **Thomas A. Louis**, Senior Statistical Scientist, Rand Corporation, current JASA Applications and Case Study Editor;
- **Kathryn Roeder**, Professor, Department of Statistics, Carnegie Mellon University;
- **Thomas TenHave**, Professor, University of Pennsylvania;
- **Anastasios Tsiatis**, Professor, Department of Statistics, North Carolina State University, and
- **Scott Zeger**, Chair, Department of Biostatistics, Johns Hopkins University, current *Biostatistics* co-Editor.

Participants in the workshop also include one NIH staff member, Ram Tiwari, who is an expert in the NCI Statistical Research and Applications Branch, as well as forty junior researchers.

Topics to Be Covered:

The workshop will offer junior participants in-depth coverage of four key topics through four sessions:

- publishing in scholarly journals,
- NIH funding information and grant writing strategies,
- approaches for collaborating with practitioners, and
- survival skills for a successful career.

Sufficient time will be available for junior participants to ask candid questions and seek advice in each session.

The **first session** of the workshop covers publishing. An overview of the journal editorial process, including review criteria and practices, will be provided. A panel consisting of several senior researchers will then address questions such as techniques for writing a strong paper and issues regarding revisions. Following the panel discussion, a general discussion will take place.

The **second session** is on grant writing. Several senior participants who have served in NIH study sections, together with Dr. Ram Tiwari, will form a panel. Dr. Tiwari will give an overview of the NIH review and funding processes and related information. The senior participants will then focus on scientific aspects of writing successful methodological and collaborative grant applications.

The **third session** focuses on collaboration. Senior participants will form a panel to discuss how biostatisticians can collaborate successfully with practitioners.

Survival skills for a successful career are the focus of the **fourth session**. Topics include identifying priorities; time management; balancing methodological and collaborative research; balancing research, teaching, service, other responsibilities; and, understanding of tenure/promotion process. The two speakers who still have fresh memories of their own promotion processes will discuss their experiences and perspectives. Floor discussion and questions/answers involving senior and junior participants will follow.

All participants will then go to dinner, where discussions will continue in small, informal groups.

WORKSHOP APPLICATION PROCEDURE

Applicants must have a doctoral degree awarded no earlier than 1996 and must not have attended the previous workshop. Travel support up to \$800 will be provided. Participation will be limited to 40 junior researchers and will be on a first-come, first-served basis to eligible applicants. Each applicant should submit a short (one page or less) statement of his/her motivation for attending the workshop, and include a brief CV. Women and minorities are encouraged to apply. The deadline for receipt of applications is **December 1, 2001**. All items should be sent to

ENAR Junior Researcher Workshop Committee
International Biometric Society (ENAR)
11250 Roger Bacon Drive, Suite 8
Reston, VA 20190-5202

703-437-4377 (voice)
703-435-4390 (fax)
E-mail: enar@enar.org

Detailed information about the workshop will be forthcoming. For more details or questions, please e-mail the planning committee chair, Naisyin Wang: nwang@stat.tamu.edu.

PRELIMINARY INVITED PROGRAM

PRESIDENTIAL INVITED ADDRESS (ENAR)

Sir Richard Peto, Oxford University

IMS SPECIAL LECTURES (IMS)

Statistics in Neuroscience

Rob Kass, Carnegie Mellon University

L'evy Random Fields and Statistical Inverse Problems

Robert L. Wolpert, Duke University

INVITED SESSIONS (ENAR/IMS)

Recent Advances in Estimating Diagnostic Error Without a Gold Standard

Organizer: Paul Albert, National Cancer Institute

Analysis of Outcomes Challenged by Induced Dependent Censoring

Organizer: Yijian Huang, Fred Hutchinson Cancer Research Center

The Use of Haplotypes in Genetic Epidemiology

Organizer: Kathryn Roeder, Carnegie Mellon University

Applications of Spectral Methods for Spatial Data

Organizer: Oliver Schabenberger, Virginia Tech

Clustering and Mixture Modeling Applications

Organizer: David W. Scott, Rice University

Cancer Screening in the New Millennium

Organizer: Yu Shen, M.D. Anderson Cancer Center

Survival Analysis Methods in Genetic Studies

Organizer: Hongzhe Li, University of California, Davis

Spatial Optimal Design With Application to Ecology

Organizer: Chii-Dean Lin, San Diego State University

Recent Advances in Dimension Reduction for Regression

Organizer: Dennis Cook, University of Minnesota

Statistical Methods for Reproductive Health

Organizer: Haibo Zhou, University of North Carolina

Statistical Methods for Small-Area Estimation

Organizer: Barry Graubard, National Cancer Institute

Non- and Semiparametric Modeling Strategies for Biological/ Medical Data

Organizers: Naisyin Wang, Texas A&M University;
Colin Wu, Johns Hopkins University

Statistical Applications With Microarray Data

Organizer: Wei Pan, University of Minnesota

Statistics in Brain Mapping

Organizer: Keith Worsley, McGill University

Modeling With Penalized Regression Splines

Organizers: Timothy G. Gregoire, Yale University;
Mary Lindstrom, University of Wisconsin-Madison

Recent Advances in Modeling Longitudinal Data

Organizer: Michael Daniels, Iowa State University

Bayesian Methods for Analyzing Gene Expression Data

Organizer: Elizabeth S. Garrett, Johns Hopkins University

Decision Analysis in the Pharmaceutical Industry

Organizer: Jerry Nedelman, Novartis

FDA Advisory Committee Meetings: A Statistician's Perspective

Organizer: Janet Wittes, Statistics Collaborative

Semiparametric Models in Survival Analysis

Organizer: Zhiliang Ying, Columbia University

Statistical Issues in the Design and Analysis of Extensions to Clinical Trials

Organizers: Matilde Sanchez and Meehyung Cho,
Merck Research Laboratories

Biologically Motivated Developments in Categorical Data Analysis

Organizer: Craig B. Borkowf, National Cancer Institute

Health Effects of Air Pollution: Statistical Methods and Future Directions

Organizer: Francesca Dominici, Johns Hopkins University

Joint Modeling of Longitudinal and Survival Data

Organizer: Joseph Ibrahim, Harvard School
of Public Health

Semiparametric Mixed Effects Regression Models

Organizer: Paul Rathouz, University of Chicago

Applications of Function Estimation

Organizer: Catherine Loader, Bell Lab, Lucent

Monte Carlo in Action

Organizer: Jun Liu, Harvard University

Statistical Methods for Animal Experiments

Organizer: David Dunson, National Institute of Environmental Health

Current Hot Topics in Vaccine Field Studies

Organizer: M. Elizabeth Halloran, Emory University

Statistical Issues in Studies of Mother-to-Child-Transmission of HIV

Organizer: Jim Hughes, University of Washington

Gene-Environment Interaction: Statistical Issues in the Epidemiological Study of How Genetic Makeup and Environmental Exposures Jointly Influence Disease Risk

Organizer: David M. Umbach, National Institute of Environmental Health

Outcome Adaptive Methods in Early Phase Clinical Trials

Organizer: Peter Thall, M.D. Anderson Cancer Center

Surrogate Endpoints in Clinical Trials

Organizers: Paul Albert, National Cancer Institute; Dean Follmann, National Heart, Lung and Blood Institute

Health Economics Meets Statistics: Analysis of Medical Costs

Organizers: Ruth Etzioni, Fred Hutchinson Cancer Research Center; Rocky Feuer, National Cancer Institute

Some Recent Developments and Applications of Random Partition Distributions

Organizer: Hemant Ishwaran, Cleveland Clinic Foundation

New Software

Organizer: Heping Zhang, Yale University

**FOR FURTHER INFORMATION
ABOUT THE PROGRAM, PLEASE
CONTACT**

Joanna H. Shih

National Cancer Institute
Biometric Research Branch
6130 Executive Blvd, EPN/8132
Bethesda, MD 20892-7434

E-mail: jshih@helix.nih.gov

DIVERSITY WORKSHOP

On Sunday, March 17, ENAR will be sponsoring a special workshop entitled “Fostering Diversity in Biostatistics.” Faculty and students from several Washington, D.C., area historically black colleges and universities will be invited to attend. The workshop will run from 11 a.m.–4:30 p.m. Mentoring, recruiting, and retaining minority students are important themes of the workshop. Registration is required. For information please contact Amita Manatunga at 404-727-1309 or via e-mail: amantu@sph.emory.edu.

SHORT COURSES

SC1: A SURVEY OF ANALYSIS METHODS FOR FUNCTIONAL DATA

(FULL DAY)

MARY LINDSTROM, UNIVERSITY OF WISCONSIN

Functional data arise when the ideal observation for each experimental unit is a curve or function. Since we usually cannot observe the entire function, a functional data set typically consists of sets of noisy observations from each of a number of curves. Functional data is a relatively new term and data of this type have also been referred to as “repeated measures” or “longitudinal data.” Functional data however usually have the special feature that each individual’s data describe a relatively complex curve. Typical goals in analyzing functional data include estimating the typical curve for the population from which the sample of individuals was drawn, describing the between- and within-curve variability structure, estimating individual curves, and testing for differences between groups of curves.

This course covers a number of methods for analyzing functional data. These range from simple to complex and include two-stage regression models, linear and nonlinear mixed effects models, self-modeling (a semi-parametric method), principle curve analysis, and functional linear models. Available software is discussed and examples provided using S+ and/or R.

Participants should be very comfortable with linear regression and matrix manipulations. In addition, we discuss methods based on nonlinear regression, random effects models, regression splines, and principal components. These techniques are briefly described but, because of limited time, prior experience with one or more of these topics will increase the usefulness of the course.

SC2: DESIGN AND ANALYSIS OF CLUSTER RANDOMIZATION TRIALS

(FULL DAY)

ALLAN DONNER, PH.D., THE UNIVERSITY OF WESTERN
ONTARIO; AND NEIL KLAR, CANCER CARE ONTARIO

The purpose of this course is to present a systematic and unified treatment of comparative trials that randomize intact social units, or clusters of individuals, to different intervention groups. Such trials have become particularly widespread in the evaluation of nontherapeutic interventions, including lifestyle modification, educational programs, and innovations in the provision of health care. Their increasing popularity over the last two decades has led to an extensive body of methodology and a growing, but somewhat scattered, literature that cuts across several disciplines in the statistical, social, and medical sciences. We integrate this material into a full-day course that emphasizes applications to health research. The overall prerequisite for the course is knowledge of the fundamentals of biostatistics and familiarity with the basic principles of design and analysis of clinical trials. The sequence of topics presented are based on the recently published text entitled *Design and Analysis of Cluster Randomization Trials in Health Research* by Allan Donner and Neil Klar (Arnold Publishing Company, London, 2000).

DATE
SUNDAY,
MARCH 17, 2002

FEE
Full Day
Members
\$180 (\$205 after 2/10)
Nonmembers
\$205 (\$230 after 2/10)

Half Day
Members
\$100 (\$125 after 2/10)
Nonmembers
\$125 (\$150 after 2/10)

REGISTRATION
Saturday, March 16,
3:00–5:00 p.m.
Sunday, March 17,
7:00–8:30 a.m.

COURSE
Sunday, March 17,
8:30 a.m.–5:00 p.m. (full day)
(lunch on your own)

Sunday, March 17,
1:00–5:00 p.m. (half day)

SC3: BAYESIAN SURVIVAL ANALYSIS

(FULL DAY)

**JOSEPH G. IBRAHIM, HARVARD UNIVERSITY;
AND MING-HUI CHEN, UNIVERSITY OF
CONNECTICUT**

Survival analysis arises in many fields of study, including medicine, biology, engineering, public health, epidemiology, and economics. Recent advances in computing; software development, such as BUGS; and practical methods for prior elicitation have made Bayesian survival analysis of complex models feasible for both practitioners and researchers. This short course provides a comprehensive treatment of Bayesian survival analysis. Several topics are addressed, including parametric and semiparametric models, proportional and nonproportional hazards models, frailty models, cure-rate models, model selection and comparison, joint models for longitudinal and survival data, models with time-varying covariates, missing covariate data, design and monitoring of clinical trials, accelerated failure time models, models for multivariate survival data, and special types of hierarchical survival models. We also consider various censoring schemes, including right- and interval-censored data. Several additional topics related to the Bayesian paradigm are discussed, including noninformative and informative prior specifications, computing posterior quantities of interest, Bayesian hypothesis testing, variable selection, model-checking techniques using Bayesian diagnostic methods, and Markov chain Monte Carlo (MCMC) algorithms for sampling from the posterior and predictive distributions.

The course is applied in flavor and also examines more fundamental topics, such as basic MCMC sampling and basic concepts of the Bayesian paradigm. Datasets and case studies are examined in detail, and the software package BUGS is demonstrated for a wide variety of models and applications. The course is based on the recently published book titled *Bayesian Survival Analysis*, by Ibrahim, Chen, and Sinha (Springer-Verlag, 2001). The prerequisite for this course is one course in statistical inference at the level of Casella and Berger, and some introductory knowledge of Bayesian inference.

SC4: STATISTICAL ANALYSIS FOR GENETIC EPIDEMIOLOGY

(FULL DAY)

**ROBERT C. ELSTON
AND AUDREY H. SCHNELL,
CASE WESTERN RESERVE UNIVERSITY**

After an initial overview of genetic terminology and concepts, the course covers the underlying theory and application of S.A.G.E. (Statistical Analysis for Genetic Epidemiology) Release 4.0 (using downloadable data for examples), utilizing some of the latest methods for studying familial correlations, linkage analysis, and association analysis. This short course focuses on the use of the

program package S.A.G.E. to analyze family data. Because S.A.G.E. is designed to perform meaningful analyses with minimal user direction, emphasis is placed on interpreting the computer program output, rather than writing a parameter file for program input, for each of these applications. Participants are expected to have a basic knowledge of biostatistics or statistics, but no prior knowledge of genetics. The manual for S.A.G.E. 4.0 can be viewed at <http://darwin.cwru.edu/docs/>

SC5: STATISTICAL ANALYSIS OF MICROARRAY DATA

(HALF DAY)

**LISA MCSHANE, MICHAEL D. RADMACHER,
AND RICHARD SIMON,
NATIONAL CANCER INSTITUTE**

This course provides an overview of statistical issues that arise in the design and analysis of microarray studies. The course begins with an elementary explanation of microarray technology followed by a discussion of the various sources of variability inherent in microarray experiments, methods of evaluating data quality, and data normalization techniques. Focus then shifts to outlining the main types of scientific questions that investigators aim to answer from microarray experiments, accompanied by an in-depth discussion of proper design and analysis strategies for addressing each of the specific types of questions. Statistical analysis methods discussed include clustering methods, class-prediction methods, permutation tests, multiple-comparisons procedures, ANOVA/mixed-model approaches, and Bayesian methods. Analysis methods covered range from basic to more computationally complex procedures, and efforts are made to identify software available for carrying out these procedures. Visualization methods and graphical display techniques will also be demonstrated. Numerous real examples are presented throughout the course to reinforce concepts and illustrate the methods. Master's level training in biostatistics or the equivalent is assumed.

Tutorial sessions, a popular addition to the program, stress the practical aspects of applying newer statistical methods or the use of specialized computer software. Titles and abstracts for this year's tutorials are listed below.

T1: HANDLING MISSING DATA IN LONGITUDINAL STUDIES: AN IMPUTATION APPROACH

MYUNGHEE CHO PAIK, COLUMBIA UNIVERSITY

MONDAY, MARCH 18, 8:30–10:15 A.M.

In this tutorial, we review different approaches in handling missing data and then compare the pros and cons of each. We present specific examples of handling missing outcomes or covariates in multivariate regression settings using an imputation approach. The methods presented through the examples are (1) formal in that we can draw correct inferences if the model assumptions are right, and (2) easy-to-implement. We also provide SAS codes used in the examples.

T2: MICROARRAY DATA ANALYSIS

RUSSELL WOLFINGER, SAS INSTITUTE, INC.

MONDAY, MARCH 18, 1:45–3:30 P.M.

The recent flood of microarray data has presented biostatisticians with wonderful opportunities to utilize their training in working with scientists to draw optimal conclusions. It has also spurred a lot of new statistical research with varying degrees of complexity and usefulness. In this tutorial, we present a systematic approach to microarray data analysis with a view toward standardized interpretation. The framework centers around tried-and-true mixed linear models, and we discuss methods for effectively applying them. Examples derive from both oligonucleotide and cDNA arrays.

T3: STATISTICAL INFERENCE FOR QUALITY-ADJUSTED LIFETIME

HONGWEI ZHAO, UNIVERSITY OF ROCHESTER

MONDAY, MARCH 18, 3:45–5:30 P.M.

In this tutorial, we discuss the motivation for using the measure, quality-adjusted lifetime (QAL), that incorporates both quality and quantity of life. We outline the difficulties encountered in making inference about QAL with censored data. We present

TUTORIALS

methods for estimating the survival distribution of QAL, the mean of QAL, and methods for testing the difference of QAL from two random samples, when independent right-censoring is present. Finally, we discuss regression problems with QAL. Due to the presence of censoring, all the inference procedures are intended for QAL accumulated over a specific time period, which is smaller than the largest observation time. Examples are used to illustrate the methods.

T4: EVALUATING THE PERFORMANCE OF HEALTH CARE PROVIDERS

CONSTANTINE GATSONIS, BROWN UNIVERSITY

TUESDAY, MARCH 19, 8:30–10:15 A.M.

The need to measure, compare, and monitor the performance of providers of medical care, such as physicians, clinics, hospitals, and health plans, has been the focus of considerable attention and the topic of intense debates in recent years. The overall importance of the question is quite clear. However, the particular formulation of the problem and the final answers may depend on the perspective of the stakeholders involved: patients, health care providers, payers, and health policy makers. The challenge for the statistical analyst is to develop flexible and nuanced methodologic approaches that permit the explicit incorporation of particular perspectives and are powerful enough to address the statistical complexity of the data. Some aspects of this complexity are common to observational data, notably the effects of selection and differential ascertainment. Others include the correlations due to clustering in the data and the low precision resulting from the relatively small sample sizes within each cluster. In addition, the data may involve multivariate and longitudinal observations on each cluster, and the analysis may need to address issues of multiple comparisons. The latter is a significant concern when ranks are reported and when performance indices are used to screen providers and identify “outliers.”

In this tutorial, we examine the conceptual framework and the main methodologic approaches to the evaluation of the performance of health care providers. The use of hierarchical regression models is featured as the primary methodologic tool. The analysis of unidimensional, cross-sectional measures of performance provides the main setting for the discussion. However, we also examine recent methodologic developments in the field, which address the analysis of multidimensional and longitudinal measures of provider performance.

T5: ANALYSIS OF CLUSTER RANDOMIZED TRIALS: TWO CASE STUDIES

ROSLYN A. STONE, UNIVERSITY OF PITTSBURGH

TUESDAY, MARCH 19, 3:45–5:30 P.M.

Two recently completed cluster-randomized trials of guideline implementation strategies to change physician behavior are similar in design yet exhibit quite different clustering structure. A total of 85 defined physician groups in 25 hospitals nationwide

participated in a “Nationwide study;” 116 practice groups in 7 Pittsburgh hospitals participated in the “Pittsburgh study.” The intervention was randomized at the level of the physician practice group in both studies. This tutorial focuses on the practical aspects of analyzing these studies, with emphasis on the comparative analysis of a relatively well-balanced and an imbalanced study. We focus on regression methods for discrete survival and binary outcomes using Stata and SUDAAN. Attendees should be familiar with generalized linear models.

ROUNDTABLE LUNCHEONS

DATE

**MONDAY, MARCH 18,
12:15–1:30 P.M.**

Fee

\$25

Space is limited.

Preregistration is required.

R1: PUBLISHING IN STATISTICAL JOURNALS

DISCUSSION LEADER: MARIE DAVIDIAN, NORTH CAROLINA STATE UNIVERSITY AND CO-EDITOR, *BIOMETRICS*

Success in publishing in statistical journals is an important evaluation criterion for both junior- and senior-level researchers. Moreover, publication in statistical journals represents the primary mode of dissemination of new results to our profession. Yet many researchers still feel uncertain about publishing in general and the review and editorial processes in particular. What practices lead to success in publishing? What qualities do editors, associate editors, and reviewers look for in a journal article? How should an author choose an appropriate outlet for his or her work? An issue that affects all authors is the fact that times to review for our journals lag well behind those in other disciplines. What are the reasons for this and what can be done to improve the situation? What do editors and associate editors

expect from referees? What should authors expect from the editorial process? This roundtable serves as a forum to discuss these and other relevant issues.

R2: STATISTICS IN THE COURTROOM

DISCUSSION LEADER: JOSEPH GASTWIRTH, GEORGE WASHINGTON UNIVERSITY AND DR. CHARLES R. MANN, CHARLES R. MANN ASSOCIATES, INC.

The analysis and interpretation of statistical data has an important role in a wide variety of litigation. Observational studies are routinely discussed in product liability cases concerned with whether use of a product causes a disease. Surveys are used in trademark and misleading advertising cases, and clinical studies are used to demonstrate the equivalence of drugs or the superiority of a product compared to its competitors. The role of the statistician and problems arising from the adversarial nature of the courtroom, as well as the different standards of proof in law and science, start the discussion.

R3: CONNECTING THE ISOLATED STATISTICIAN

DISCUSSION LEADER: THOMAS A. LOUIS, RAND

Isolated statisticians in government, industry, and academia (especially those early in their careers) have a difficult time obtaining advice on scientific, organizational, and political issues because they don't benefit from having an experienced statistician as supervisor and mentor. This roundtable focuses on identifying the principal issues and activities associated with improving this

situation, including the possibility of setting up a program through which experienced statisticians would act as external mentors.

R4: HEALTH INFORMATICS: OPPORTUNITIES AND CHALLENGES FOR BIOSTATISTICS

DISCUSSION LEADER: VICKI HERTZBERG, EMORY UNIVERSITY

Health informatics, a rapidly emerging discipline, refers to the application of computer science and information science to health sciences research and health care delivery. A number of subspecialty areas have emerged in the last two decades, including clinical, medical, dental, nursing, veterinary, and public health informatics. Many of the issues confronting health informaticians are familiar to biostatisticians, especially those involved in the creation, acquisition, management, merger, analysis, interpretation, and storage of very large datasets. In this roundtable discussion, we examine these issues. In particular we discuss the opportunities for research, application, and education that present themselves at the confluence of health informatics and biostatistics. We also discuss the challenges that may result from collaborations between health informaticians and biostatisticians.

R5: ACADEMIC CAREERS IN BIOSTATISTICS

DISCUSSION LEADER: LISA WEISSFELD, UNIVERSITY OF PITTSBURGH

This roundtable focuses on the potential career paths for biostatisticians in academia. Biostatisticians work in many different environments in academia from schools of public health to schools of medicine and, less typically, arts and sciences faculty. The demands placed on a faculty member and the availability of jobs in each of these environments can be quite different. The initial years in an academic career can present a challenge as faculty members juggle their workloads to meet the demands of their job while developing an independent research program. The discussion centers around the following issues: description of the types of work that biostatisticians do, availability and types of jobs, the “job hunting” process, and the juggling and prioritizing of the multiple demands of each of these jobs.

R6: FUTURE DIRECTIONS IN BIOSTATISTICS

DISCUSSION LEADER: NANCY L. GELLER, NATIONAL HEART, LUNG AND BLOOD INSTITUTE

Although predicting the future is risky, the convener predicts that the future of biostatistics will be influenced by improved

computing and the explosion of knowledge of genetics and, more generally, new areas of biomedicine (such as better imaging). The generation of huge data sets will lead to more exploratory analyses and perhaps more specialization among statisticians. Several questions arise: How will we deal with communicating new methods to each other and to our biomedical colleagues? How will we train biostatisticians to undertake this broad range of problems? Can we train enough biostatisticians to meet these challenges (without glutting the market)? How will these developments impact clinical trials?

R7: CAREERS IN STATISTICAL CONSULTING

DISCUSSION LEADER: YUKO PALESCH, TCIG*STATSSM—MEDICAL UNIVERSITY OF SOUTH CAROLINA

Statistical consulting is the *raison d’être* of many applied statisticians. In the health care and medical fields, clinical investigators in academia often require statistical expertise in the design and analysis of their studies. Many pharmaceutical and biotechnology companies seek statistical support from consulting groups and contract research organizations (CROs) for reasons ranging from lack of resources within the company to a desire to validate analysis results via an independent group of statistical experts. This roundtable discussion will explore the issues facing both the provider and the recipient of such statistical consultations. Topics of discussion include areas of statistical expertise in demand; academic versus private consulting groups; evaluation criteria; and some practical issues in establishing and conducting statistical consulting services (e.g., advertisement, standard operating procedures, and authorship of publications).

R8: MISSING DATA AND REGULATORY EVALUATION OF CLINICAL TRIALS

DISCUSSION LEADER: SUSAN ELLENBERG, FOOD AND DRUG ADMINISTRATION

In an ideal study, there would be no missing data. When the amount of missing data is very small, the approach to analysis—dropping out subjects with missing data, imputing the missing data using crude or sophisticated approaches, assuming a worst-case scenario—won’t usually have much impact on the inference to be made. But it is unfortunately the case that the amount of missing data often is large enough to present real problems in interpreting the results of clinical trials. In this roundtable session, we discuss various approaches to performing analyses in the presence of missing data, the meaning of intent-to-treat analysis when some outcome data are missing, ways of designing studies to minimize missing data and/or the impact of missing data on study results, and the regulatory guidance that has been put forward regarding the handling of missing data.

R9: IMAGE ANALYSIS IN THE PHARMACEUTICAL INDUSTRY

**DISCUSSION LEADER: DARRYL DOWNING,
GLAXOSMITHKLINE**

This roundtable will provide a forum for discussing current imaging issues in the pharmaceutical industry—both pre-clinical and clinical imaging. We probe how the statistician can help the scientist/clinician in utilizing images to make informed decisions. Discussions center around regulatory and statistical considerations of images (design, statistical parametric mapping, and incorporation of pharmacokinetic endpoints such as AUC), novel approaches to analysis of images, software support, and related information technology issues.

R10: STATISTICAL ISSUES IN MEDICAL DEVICES

**DISCUSSION LEADER: GREGORY CAMPBELL,
FOOD AND DRUG ADMINISTRATION**

This roundtable focuses on unique statistical challenges that evaluation of medical devices pose in terms of the design, as well as the subsequent analysis of the clinical data. Not only are there almost all of the statistical issues of traditional clinical trials, but the wide variety of medical devices create a large number of special challenges. There are also often opportunities to incorporate prior information. In addition, diagnostic medical devices (including imaging, as well as in vitro products) provide their own set of statistical challenges.

R11: GENOMIC CONTROL: A FIX FOR SPURIOUS CORRELATIONS IN CASE-CONTROL STUDIES IN GENETIC EPIDEMIOLOGY?

**DISCUSSION LEADER: KATHRYN ROEDER,
CARNEGIE MELLON UNIVERSITY**

To discover genes associated with disease, geneticists often design either a case-control study or the equivalent of a matched case-control study (known as a family-based design and analyzed using McNemar's test). In both designs, the objective is to determine if particular genotypes are observed more often than expected in case subjects. While more powerful and convenient, the case-control study design is subject to producing spurious correlations, primarily because human populations are made up of numerous subpopulations, each with different genetic backgrounds.

Recent literature, however, suggests that it is possible to correct for confounding in case-control studies without collecting data on the genetic background of study participants. These claims are based on a unique feature of genetic studies. Unlike the typical

epidemiological setting, it is possible to repeat the association study under the null hypothesis by simply measuring genotypes at numerous sites across the genome. This follows because the same probabilistic mechanism generates an individual's entire genome. For example, cousins are equally likely to share DNA from a common ancestor at any point on their chromosomes.

A new experimental design, called Genomic Control, has been proposed that recommends using this repetition to control for confounding (Devlin and Roeder, *Biometrics* 55:997–1004, 1999). An alternative latent class approach that also utilizes the Genomic Control concept has been proposed by Pritchard et al. (*Amer. J. Hum. Genet.* 67:170–181, 2000) and extended by Satten et al. (*Amer. J. Hum. Genet.* 68, 466–477 2001).

Issues to be discussed include: Is this a valid way to control for confounding in a case-control study? As genomic control focuses on spurious correlations induced by hidden subpopulations, does it also account for biases induced by environmental confounding? Can the repetition across the genome best be exploited by conditioning on unobserved latent variables coding for ethnicity or by measuring the over-dispersion induced in measures of association due to confounding? To perform Genomic Control, how many control loci should be selected, and how should they be selected?; Where do we go from here—should we abandon the protection of family-based studies in favor of Genomic Control? Is the greater power and convenience of the case-control study design worth the risk?

SPECIAL THANKS

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ENAR STUDENT AWARDS

The abstract, manuscript, and the letter requesting nomination for a Student Award must be received by November 1, 2001. The manuscript should be submitted with two title pages: one not attached to the text, with the title, author list, contact address, and telephone number (fax number and e-mail); and the second, attached to the text, with only the title. Manuscripts will be reviewed without author or institutional identification. Please be certain the text contains no obvious identifying information other than on the title page of the manuscript.

Manuscripts should be prepared double-spaced, in manuscript format, using *Biometrics* guidelines for authors. These guidelines may be accessed by going to <http://stat.tamu.edu/~biometrics/directions.html>. They may be up to 20 pages, exclusive of tables and figures. Use one-inch margins and at least 10-point type. Reported research should be relevant to biometrics applications. The reported work must be that of the student, although the manuscript can be coauthored with a faculty advisor or a small number of collaborators. The student must be the first (senior) author of the manuscript.

If a student's presentation of the research is conditional on receipt of a travel award, this restriction must be stated in the cover letter. If this restriction is not stated, the abstract of the manuscript will be included in the meeting program irrespective of the travel award decision.

The student must be an ENAR member (submitter must have been an ENAR member either at the time of submission of manuscript or at the time the work was completed), a degree candidate in any term during 2001 at an accredited institution, and able to present the research during the ENAR Spring Meeting, March 17–20, 2002, in Washington, D.C. Previous recipients of ENAR travel fellowships are ineligible.

REVIEW CRITERIA

The Awards Committee will review blinded copies of the submitted papers and base its selection of travel fellowships and award winners on several factors:

- Motivation by an application relevant to biometrics research
- Methodology development or investigation applicable to the motivating problem.
- Inclusion of an application of the described methodology
- Clarity and style of presentation.

SELECTION PROCESS

Up to 20 award winners will be selected by a review committee chaired by 2001 ENAR Past President Louise Ryan. All travel award winners will receive a certificate, reimbursement for travel expenses up to \$500, tuition for the short course of their choice, and an invitation to the President's Reception. Once travel awards have been determined, the committee will select the best manuscript, whose author will receive an additional \$500 prize and the John Van Ryzin Award.

SUBMISSION OF MANUSCRIPTS

Papers should be postmarked no later than **November 1, 2001**.

The submission should include

- a cover letter with contact information;
- one (1) complete title page with author, institutional affiliation, address, phone/fax numbers;
- six (6) copies of the ENAR abstract form;
- a letter signed by the faculty advisor or other department representative, as well as by the student, attesting to the following:
 - 1) The student is a degree candidate in any term during the year 2001.
 - 2) The reported work is that of the student. Although the manuscript may be coauthored, the student must be the first (senior) author of the manuscript.

All items should be sent by **November 1** to:

ENAR Student Awards Committee
International Biometric Society (ENAR)
11250 Roger Bacon Drive, Suite 8
Reston, VA 20190–5202

Voice: 703–437–4377

Fax: 703–435–4390

E-mail: enar@enar.org

Registration Form

The International Biometric Society/Eastern North American Region (ENAR)

With Participating Societies, IMS and Sections of ASA

2002 Spring Meeting ■ March 17–20, 2002 ■ Hyatt Regency Crystal City ■ Arlington, VA

(Please print or type)

First name _____ Middle initial _____ Last name _____

Degree _____

Name for badge if different _____ Spouse/Guest name for badge _____

Organization _____

Mailing address _____

City _____ State _____ ZIP code _____

Daytime phone(_____) _____ Fax(_____) _____ E-mail _____

Membership in Participating Societies (Check **all** that apply.)

☐ ENAR ☐ WNAR ☐ ASA ☐ IMS ☐ IBS

Meeting Fees (to be paid by **all** applicants)

Registration fees, less a \$100 administrative fee, will be refunded if written notice is received by February 17, 2002. Requests for refunds will not be honored after February 17.

Meeting Registration

- ☐ ENAR/WNAR/IBS Member
\$170 (\$195 after 2/10) \$ _____
- ☐ ASA Member (not a member of
ENAR/WNAR/IBS)
\$190 (\$215 after 2/10) \$ _____
- ☐ IMS Member (not a member of
ENAR/WNAR/IBS)
\$190 – \$20 IMS contribution = \$170
(\$195 after 2/10) \$ _____
- ☐ Nonmember (in any participating society)
\$260 (\$285 after 2/10) \$ _____
- ☐ Student*
\$90 (\$100 after 2/10) \$ _____

Short Courses

The short courses will be held on Sunday, March 17, from 8:30 a.m.–5:00 p.m. (Indicate course number.)

- ☐ Member (participating society)
SC _____
Half Day: \$100 (\$125 after 2/10)
Full Day: \$180 (\$205 after 2/10) \$ _____
- ☐ Nonmember* SC _____
Half Day: \$125 (\$150 after 2/10)
Full Day: \$205 (\$230 after 2/10) \$ _____

Tutorials

The tutorials will be held on Monday, March 18, and Tuesday, March 19.

- ☐ T1 Handling Missing Data in \$50 \$ _____
Longitudinal Studies: Imputation
Approach
- ☐ T2 Microarray Data Analysis \$50 \$ _____
- ☐ T3 Statistical Inference for Quality-
adjusted Lifetime \$50 \$ _____
- ☐ T4 Evaluating the Performance of \$50 \$ _____
Health Care Providers
- ☐ T5 Analysis of Cluster Randomized \$50 \$ _____
Trials: Two Case Studies

Roundtables

The roundtables will be held on Monday, March 18. Space is limited. Preregistration is required. Indicate the number of your 1st, 2nd, and 3rd choices:

1st # _____ 2nd # _____
3rd # _____ \$25 \$ _____

Diversity Workshop

Preregistration required. Space is limited.

☐ Yes ☐ No Free

Social Events

- ☐ Capitol Steps,
Tuesday, March 19
Regular \$60
Student \$30 \$ _____

Membership

☐ YES, I want to renew my ENAR membership
or become an ENAR member.

- ☐ Regular \$70 \$ _____
☐ Associate \$20 \$ _____
☐ Student* \$20 \$ _____

TOTAL PAYMENT ENCLOSED

\$ _____

Form of Payment

☐ Check ☐ Money order ☐ MasterCard ☐ VISA
The check or money order should be in U.S. currency, payable to ENAR.

Credit Card Information

Signature _____

Card no. _____ Exp. date _____

Special Needs

Please list any special needs you have:

Return Registration Form with payment to

ENAR Conference Manager
ENAR Lockbox #4643
P.O. Box 85080
Richmond, VA 23285-4643

Fax: 703-435-4390

* Student: With letter from major professor verifying status.

If you are paying by credit card and fax your registration form, **PLEASE DO NOT ALSO MAIL THE FORM—This may result in double payment.**

Hotel Registration Form

The International Biometric Society/Eastern North American Region (ENAR)

Hyatt Regency Crystal City ■ Arlington, VA

Reservation requests will be honored as space allows. You will receive confirmation directly from the hotel.

The cutoff date is **February 22, 2002.**

(Please print or type)

Name _____

Mailing address _____

City _____ State _____ Zip code _____

Daytime phone(_____) _____ Fax(_____) _____

Please reserve _____ rooms for _____ people.

Arrival date _____ Arrival time _____

Departure date _____

Check-in time is 3:00 p.m.; checkout time is noon.

Room Preferences

Single/Double \$155

Additional person \$25 each

☐ Smoking ☐ Nonsmoking ☐ Special Needs _____

Person(s) sharing with 1. _____

2. _____

☐ 1 person/1 bed ☐ 2 people/1 bed ☐ 2 people/2 beds ☐ 3 people/2 beds ☐ 4 people/2 beds

Reservation Terms (please read)

The hotel will require a first-night's deposit, which is refundable up to 24 hours in advance of your arrival date. Checks and credit cards are acceptable to establish prepayment.

I am guaranteeing my reservation with the following:

☐ Check or money order

☐ MasterCard

☐ VISA

☐ AMEX

☐ Diner's

☐ Carte Blanche

☐ Discover

Card no. _____ Expiration date _____

I authorize the hotel to charge my account for one night's deposit and applicable taxes.

Signature _____

Mail or fax Hotel Reservation Form to

Hyatt Regency Crystal City • 2799 Jefferson Davis Highway • Arlington, VA 22202

1-800-Hiltons or 703-418-1234 • (Fax) 703-418-1289

Or call the hotel to make your reservation. Be sure to say you are with ENAR.

☐ Original ☐ Photocopy

ABSTRACT FORM

The International Biometric Society

Eastern North American Region

Spring Meeting
March 17–20, 2002
Hyatt Regency Crystal City
Arlington, VA

E-mail address: _____

NEW! Online registration and abstract submissions (text only) are being accepted for ENAR 2002. Details can be found on page 5 or at www.enar.org. Also on the meetings page of our Web site, see the guidelines for effective presentations.

Instructions for Mail-in Submissions:

- On the first line of the abstract, center the abstract title in capital letters. On the second line, center the authors' names; mark the presenter's name with an asterisk. On the third line, center a work affiliation. On the last line, enter the presenter's e-mail address.

- Abstracts will be reproduced exactly as submitted. Material overlapping or outside the black box will be deleted in publication. Please **do not fold** your abstract. Illegible or carelessly typed abstracts will **not** be accepted.

- Abstracts must be typed on this form inside the box. If absolutely necessary, abstracts typed on plain white paper that fit exactly within the dimensions of the above box will be accepted. Make one photocopy of this form and check the box "Photocopy" at top. Mark this form "Original."

Forms must be mailed; faxes will not be accepted.

- **Please mail this form and one photocopy, for RECEIPT no later than November 15, 2001, to:** ENAR Program Chair, 11250 Roger Bacon Drive, Suite 8, Reston, VA 20190–5202.

All contributed abstracts will be accepted. Please note you must register for the conference when you submit your abstract. You will receive confirmation of both your registration and abstract submission.

Contact author (for correspondence):

Name _____

Work affiliation _____

Mailing address _____

Daytime phone (____) _____ Fax (____) _____

E-mail address _____

Scheduling conflict with

☐ ENAR/ASA/IMS Committees (specify) _____

☐ COPSS

☐ Other (specify) _____

Category:

☐ IMS Session

☐ Contributed Paper

☐ Contributed Poster

☐ Invited Paper

Organizer: _____

☐ Student Award Submission

☐ Oral ☐ Poster

☐ Special Contributed Paper

Organizer: _____

Would you be willing to serve as a chair for a session?

☐ Yes ☐ No

Please indicate the most appropriate (1) and the second most appropriate (2) categories:

_____ Bayesian Methods
_____ Bioassay & Carcinogenicity
_____ Biopharmaceutical Application
_____ Categorical Data
_____ Causal Inference
_____ Clinical Trials
_____ Diagnostic and Screening Tests
_____ Environmental & Ecological Applications

_____ Epidemiologic Methods
_____ Estimating Equations
_____ Generalized Linear Models
_____ Genetics
_____ Health Services Research
_____ Imaging
_____ Longitudinal Data
_____ Markov Chain Models
_____ Measurement Error
_____ Methods for Multiple Endpoints/
_____ Repeated Measures

_____ Missing Data
_____ Nonparametric Methods
_____ Random Effects Models
_____ Spatial Modeling
_____ Survey Research Data
_____ Survival Analysis
_____ Time Series
_____ Other (specify) _____

Register by February 20, 2002. No forms will be accepted at the conference. Mail completed forms plus \$10 check to ENAR Job Placement Service 11250 Roger Bacon Drive, Suite 8 Reston, VA 20190-5202		2002 ENAR Spring Meeting APPLICANT FORM (see over for instructions)		ENTER CLASSIFICATION CODE: (Use code A through D from reverse side. Separate form required for each code.) For office use only: NUMBER:	
(PLEASE TYPE OR PRINT IN BLACK INK.)					
Name _____ <div>LastFirstMiddle</div> Address _____ City _____ State/Province _____ Zip/mail code _____ Telephone (include area code) (_____) _____ E-mail address _____				<input type="checkbox"/> WILL ATTEND THE PLACEMENT SERVICE <input type="checkbox"/> WILL NOT ATTEND THE PLACEMENT SERVICE (Contact directly)	
U.S. CITIZEN		<input type="checkbox"/> Yes <input type="checkbox"/> No (Specify status) _____		<input type="checkbox"/> CHECK HERE IF RESUME IS ENCLOSED	
PREFERENCES		Geographic Location _____ Type of Organization <input type="checkbox"/> Academic <input type="checkbox"/> Government <input type="checkbox"/> Industry <input type="checkbox"/> Other (Specify) _____		Salary (optional) \$ _____ Date available _____	
EDUCATION		Name of College or University		From	To
		Languages		Honors and/or Awards	
		Areas of concentration in course work			
EXPERIENCE (Last or current position)		Position Title Name of Organization From _____ to _____		Primary Duties and Responsibilities Salary \$ _____	
EXPERIENCE (Most significant previous position)		Position Title Name of Organization From _____ to _____		Primary Duties and Responsibilities Salary \$ _____	
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS:					
SKILLS, KNOWLEDGE, ABILITIES NOT FULLY REFLECTED ABOVE (major interest areas):					
COMPUTER SKILLS (languages, packages, machines, operating systems, etc.):					
MAJOR INTEREST AREAS IN STATISTICS:					

INSTRUCTIONS FOR APPLICANT FORM

JOB PLACEMENT SERVICE

ENAR 2002 SPRING MEETING

There will be a job placement service at the Spring Meeting. The registration deadline for the placement service is February, 20, 2002. Forms must be received by the deadline to insure placement in the review binders. ENAR cannot accept confidential listings. The Placement Center will be open during the following times:

Sunday, March 17, 4:30–6:30 p.m.

Monday, March 18, 9:00 a.m.–5:00 p.m.

Tuesday, March 19, 9:00 a.m.–5:00 p.m.

The Placement Center will not be open on
Wednesday, March 28.

Please check:

☐ Will attend placement service

☐ Will not attend placement service

Please check:

☐ Full-time student

☐ Not a full-time student

Fees: \$10 per applicant. No fee for full-time students. Please make checks payable to ENAR.

Please follow the instructions for completing the Applicant Form.

1. Enter the ONE classification code (below) that best describes your qualifications in the upper right-hand corner of the form in the "Classification Code" box. **A separate Applicant Form is required for each code.** No more than **THREE** classification codes (forms) will be accepted.
2. **ONE copy of EACH form with a different classification code on it must be submitted.**
3. **You must submit ONE copy of your resume if you wish it to be included in the resume book, BUT NOT IN LIEU OF the fully completed form.** The resumes (**5-page limit**) will be filed separately and will be available for review by employers. Bring extra resumes with you for on-site interviewing.
4. Indicate in the box provided whether or not you will attend the meeting.
5. **If you are planning to interview on site, you must register for the conference. (See registration form on page 17.)**
6. Send check and completed form(s) to
ENAR Job Placement Service
11250 Roger Bacon Drive, Suite 8
Reston, VA 20190–5202

CLASSIFICATION CODES

Applications and job orders will be classified and filed in review binders according to various specialties or areas in statistics, as indicated in the list below. **Be sure to submit a separate form for each classification code.** No more than **THREE** classification codes (forms) will be accepted.

Classification	Code	Classification	Code
Biometrics/Government	A	Academia	C
Biopharmaceutical/Industry	B	Mathematical Statistics	D

Include all essential information regarding qualifications on the form. **Please type or print in black ink.** Instructions on how to use the service on site will be provided at the meeting.

NOTE: No browsers are permitted in the Placement Service. Entrance will be restricted to registered applicants and employers. **There will be no refunds.**

Register by February 20, 2002. No forms will be accepted at the conference. Mail completed form(s) plus \$300 per employer to ENAR Job Placement Service 11250 Roger Bacon Drive, Suite 8 Reston, VA 20190-5202		2002 ENAR Spring Meeting EMPLOYER FORM (see over for instructions)		ENTER CLASSIFICATION CODE: (Use code A through D from reverse side. Separate form required for each code.) For office use only: NUMBER:	
(PLEASE TYPE OR PRINT IN BLACK INK.)					
<div>Employer's Name _____ Representative's name(s) (up to two*) _____ *The \$300 fee includes access for a maximum of two representatives. Title _____ Address _____ City _____ State/Province _____ Zip/Mail code _____ Telephone (include area code) (_____) _____ E-mail address _____</div>				<div><input type="checkbox"/> WILL INTERVIEW ON-SITE <input type="checkbox"/> WILL NOT INTERVIEW ON SITE (Contact employer directly) <input type="checkbox"/> ADDITIONAL INFORMATION WILL BE AVAILABLE ON SITE FROM _____</div>	
POSITION AVAILABLE		Title of position		Starting date	
SALARY		Starting salary or appointment range: \$		Fringe benefits	
CITIZENSHIP REQUIREMENTS		<input type="checkbox"/> YES <i>Country</i> _____ <input type="checkbox"/> NO			
POSITION DESCRIPTION		List primary duties, responsibilities, supervision, etc.			
EDUCATIONAL REQUIREMENTS		Check appropriate box and indicate field of study on line below. <input type="checkbox"/> BACHELOR'S <input type="checkbox"/> MASTER'S <input type="checkbox"/> DOCTORAL CANDIDATE <input type="checkbox"/> DOCTORATE			
EXPERIENCE REQUIREMENTS					
SPECIALIZED SKILLS, KNOWLEDGE, ABILITIES					

INSTRUCTIONS FOR EMPLOYER FORM

JOB PLACEMENT SERVICE

ENAR 2002 SPRING MEETING

There will be a job placement service at the Spring Meeting. The registration deadline for the placement service is February 20, 2002. Forms must be received by the deadline to insure placement in the review binders. ENAR cannot accept confidential listings. The Placement Center will be open during the following times:

Sunday, March 17, 4:30–6:30 p.m.

Monday, March 18, 9:00 a.m.–5:00 p.m.

Tuesday, March 19, 9:00 a.m.–5:00 p.m.

The Placement Center will not be open on
Wednesday, March 20.

The placement service fee is \$300 for each employer. Please make checks payable to ENAR. A check or money order is required; purchase orders are not accepted. An employer may list more than one position in the same city at no extra charge.

The \$300 fee is separate from the registration fee for the Spring Meeting.

Please follow the instructions for completing the Employer Form.

1. In the upper-right-hand corner of the form in the "Classification Code" box, enter the ONE classification code (below) that best describes your position. **A separate Employer Form is required for each code.**
2. **ONE copy of EACH form with a different classification code on it must be submitted.**
3. Send completed form(s) and \$300 per employer to
ENAR Job Placement Service
11250 Roger Bacon Drive, Suite 8
Reston, VA 20190–5202

CLASSIFICATION CODES

Applications and job position announcements will be classified and filed in review binders according to various specialties or areas in statistics, as indicated in the list below. Be sure to submit a separate form for each classification code.

Classification	Code	Classification	Code
Biometrics/Government	A	Academia	C
Biopharmaceutical/Industry	B	Mathematical Statistics	D

Applicant Forms and Employer Forms will not be duplicated for review binders. Include all essential information regarding the position and qualifications required on the form. Please type or print in black ink. Instructions on how to use the service on site will be provided at the meeting.

The International Biometric Society

An International Society Devoted to the Mathematical and Statistical Aspects of Biology
Eastern North American Region (ENAR)

11250 Roger Bacon Drive, Suite 8 • Reston, VA 20190-5202

Tel: 703-437-4377 • Fax: 703-435-4390 • E-mail: enar@enar.org

(Please print)

Name _____ Degree _____

Title _____

Address _____

City _____ State _____ Zip code _____

Telephone _____ Fax _____ E-mail _____

Membership Type

☐ **Regular Member** (Includes subscription to *BIOMETRICS*, the *Biometric Bulletin*, and voting rights in ENAR)

\$70.00 \$ _____

☐ **Student Member** (This form must be certified by your major professor that you are a full-time student.)

\$20.00 \$ _____

I certify that _____ is a full-time student.

Signature _____ Title _____

☐ **Associate Member** (Includes subscription to *BIOMETRICS*, but does not include voting rights in ENAR)

\$20.00 \$ _____

Associate Members only: Name of Regular Member _____

Please indicate two (2) areas of interest below (in order of preference):

☐ Agriculture (01)

☐ Genetics and Heredity (05)

Natural Resources:

☐ Animal and Veterinary Science (02)

☐ Molecular Biology and Biotechnology (06)

☐ Ecology (08)

☐ Forestry (11)

☐ Clinical Trials (03)

☐ Toxicology (07)

☐ Entomology (09)

☐ Wildlife (12)

☐ Epidemiology (04)

☐ Fisheries (10)

Payment Method

☐ Enclosed is my check, payable to ENAR (remittance accepted only in U.S. currency) for the year _____.

☐ Please charge my membership dues to ☐ VISA ☐ MasterCard

Signature _____

Card No. _____ Expiration date _____

Mail to

The International Biometric Society (ENAR)

ENAR Lockbox #4643

P.O. Box 85080

Richmond, VA 23285-4643

INTRODUCTION AND OVERVIEW (CONTINUED)

On Sunday, March 17, there will be a workshop on “Fostering Diversity in Biostatistics”. This workshop, organized by Amita Matatunga, Louise Ryan, and other members who are committed to enhancing the diversity of professionals in our fields provides a forum for discussing important concerns related to mentoring, recruiting, and retaining minority students in biostatistical programs. For details, please refer to page 10.

On Monday, March 18, we will again hold the popular luncheon roundtable discussions, which provide an opportunity to engage in discussion with colleagues around a variety of current issues of interest in our field. Topics for the eleven roundtable luncheons range from issues of general interest, such as how to be successful in publishing statistical articles and mentoring statisticians who work in environments apart from other statisticians, to statistical issues specific to particular settings or areas of application, such as choosing appropriate case-control study designs in genetic epidemiology and statistical considerations associated with evaluation of drugs or devices for regulatory approval. Each roundtable has a designated organizer who will facilitate the discussion. Details on the organizers and topics of the roundtable luncheons are on pages 14–16.

On a lighter note, our annual social event will be Tuesday, March 19, beginning at 8:00 p.m. Kathy Hirst of George Washington University and the Local Arrangements Committee have planned a special evening for us. At 8:00 p.m. we will begin with a dessert reception after which the Capitol Steps, a group locally noted and enjoyed for their political satire, will perform for us. This singing troupe of current and former Congressional staffers is the only group that comes with the Surgeon General’s warning. For a prelude to this evening of hilarity and entertainment, visit the Capitol Steps website at www.capsteps.com. If this is your first ENAR meeting or you are a student member this year, we especially encourage you to take advantage of this opportunity to meet new colleagues during a fun, informal evening. Many of us have found the social program a wonderful forum for striking up casual conversations with statisticians from other settings that have on

occasion led to unexpected future collaborations and lifetime friendships. We are pleased also to offer a greatly reduced fee to students for the social event (see page 6 for details). Due to limited seating, we strongly recommend that you sign up for this event at the same time you register for the Spring Meeting.

As in prior years, we plan to recognize the excellence of student statistical research with up to 20 ENAR Student Paper Awards. Students and their academic advisors should note that the deadline for submission of the manuscripts and applications is November 1. Additional details on these awards and eligibility requirements are provided on page 18.

We remind you also that the deadline for all contributed and invited paper submissions is November 15. This year, as we did last year, submission of abstracts may be done electronically. In order to access the abstract form, go to the ENAR Web site located at www.enar.org and click on “Meetings.” You may also submit the abstract form using page 23 of this preliminary program booklet. Please submit either an electronic or paper form, but not both. Also, please note that you must register for the meeting at the same time that you submit your abstract. You may register either electronically or by using the paper form on page 19. We encourage all authors to read carefully and to follow the guidelines for effective presentations, which are on the ENAR Web site at www.enar.org/presentation_guidelines.pdf.

Finally, we plan to have a Contributed Poster Session during the Sunday night mixer again this year. Please indicate if you would like to present your work on a poster. Faculty, if you have students whose research may be more suitable for a poster than oral presentation at this time, you should encourage them to submit a poster presentation. Work in progress or data analyses are particularly suitable for poster presentations. Poster presenters should plan to be present beside their poster during the session so that they can describe and discuss their work with the numerous interested members who visit the posters.

We look forward to seeing you in Crystal City this coming March!

LOOK FOR THE CONFERENCE PROGRAM

EARLY IN 2002

www.enar.org

**The International Biometric Society/
Eastern North American Region**
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